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United States Government

Department of Energy (DOE)

Savannah River Operations Office (SR)

**memorandum**

DATE: DEC 05 1997

REPLY TO

ATTN OF: SD (V. B. Wheeler/803-725-0379)


SUBJECT: Assessment of Vulnerabilities at Inactive Facilities and Review Plan for Waste Storage Tanks and Auxillary Equipment

TO: Acting Assistant Secretary for Environment, Safety and Health (EH-1), HQ

In accordance with the August 4, 1997, directive provided by Secretary Pena, the Savannah River Site has initiated a review of our known vulnerabilities (chemical and radiological) at inactive facilities which is documented in Attachment 1. Part of our review included an assessment of actions associated with the 1994 Chemical Safety Vulnerability Study. Only two of these actions remain to be completed. This includes the updates to all nuclear SARs and the development of SARs (or an equivalent) for non-nuclear industrial facilities plus a real time site chemical inventory.

In addition, regarding the October 21, 1997, directive, we are able at this time to provide a partial report (Attachment 2). Within the next 10 working days the requested plan will be provided to your office.

Please direct any questions you may have to me or Vickie Wheeler of my staff, at (803) 725-0379.



L. C. Sjoström  
Assistant Manager for Health,  
Safety and Technical Support

SD:VBW:lca

VF-98-0021

**Attachments**

- 1.) SRS Status on Inactive Facilities
- 2.) SRS Response to Lessons Learned for Waste Tanks

ATTACHMENT 1

Westinghouse  
Savannah River Company  
Aiken, SC 29808

RECEIVED  
STUDY 17 PM 2:32  
MAIL CONTROL



NOV 17 1997

FDD-97-0039

Mr. G. P. Rudy, Acting Manager  
U. S. Department of Energy  
Savannah River Operations Office  
P. O. Box A  
Aiken, SC 29802

973028

026/00

Dear Mr. Rudy:

**SAFETY REVIEW OF INACTIVE FACILITIES**

Ref: Letter, A. L. Schwallie to M. P. Fiori, 9/4/97  
Letter, A. L. Schwallie to M. P. Fiori, 10/2/97

In the referenced letters WSRC committed to conduct a review of all inactive nuclear and non-nuclear facilities to assure that chemical and other hazards have been identified and are being safely managed. WSRC also committed to reassess the 1994 SRS Chemical Safety Vulnerability Study and report on the outcome of both commitments to DOE-SR by 11/17/97. These two sitewide activities were coordinated by the Facilities Decommissioning Division (FDD). This letter summarizes the facility reviews and the reassessment.

A list of 130 inactive facilities was developed and verified. Ten WSRC Divisions have Facility Management responsibility for the various inactive facilities with FDD responsible for the largest number - 60. A checklist was developed covering potential worker, public and environmental vulnerabilities, and was utilized by trained Cognizant Facility personnel to conduct a walkdown of each facility. This checklist type review was a screening action designed to identify hazards that exist in the inactive facilities as well as to identify the institutional processes/systems that are in place to ensure that identified hazards are being effectively managed. This activity was completed in conjunction with the annual SARA Tier II Chemical Inventory in October 1997.

The walkdowns revealed that, with the exception of one facility, vulnerabilities are known by Facility Management and are addressed in either the facility's safety basis, surveillance and maintenance plans or are included in planned deactivation activities.

The one exception is the Beta-Gamma Incinerator (230-H, BGI) which was abandoned in place in 1988 without a documented Surveillance and Maintenance Plan and without complete characterization of the "as-left" condition.

G. P. RUDY  
FDD-97-0039  
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There are two main issues with this inactive facility:

1. There are legacy chemicals in containers (a 55 gal. drum and 7 car-boys approx. 30-40- gals. each) inside the facility with little or no characterization.
2. The BGI is an abandoned facility with various levels of beta, gamma, and alpha contamination. The facility has contaminated equipment (inside and outside) which is deteriorating.

The Solid Waste (SW) Division is currently developing a BGI Assessment Plan to assess the identified BGI issues. This plan, as well as, a cost estimate for remedial actions will be completed and transmitted to you by 12/8/97.

Over the next several weeks the WSRC Facility Evaluation Board will be conducting an independent assessment of site chemical management. One of the Boards objectives is to validate the Inactive Facility Walkdown checklist results. The Board will brief me on the results of this assessment in early December.

As previously committed, FDD is developing an algorithm to establish a systematic risk rating and prioritization ranking of these inactive facilities using the checklist results as a preliminary screening tool. The results will be used to develop action plans for disposition activities to reduce the residual risks and/or costs for these facilities. Completion of these action plans is scheduled for 7/31/98

The reassessment of the 1994 SRS Chemical Safety Vulnerability Study was conducted by the Westinghouse Safety Management Solutions Company. The review of the "Savannah River Site Management Response Plan for Chemical Safety Vulnerability Field Assessment (U)" WSRC-RP-94-863 and the "Status Report on Potential Savannah River Site Chemical Safety Vulnerabilities (U)" WSRC-RP-95-1020 verified that all items regarding inactive facilities and chemical safety are closed.

A briefing on these walkdowns was presented to DOE-SR Safety Division Personnel on 11/4/97 and a copy of a completed checklist for each of the 130 facilities was given to them. During this meeting we were asked to provide an estimate of the man-hours spent to complete the Inactive Facilities Review and an estimate of the cost to complete for those issues identified as requiring immediate remedial action. Approximately 775 man-hours were expended.

Any questions you or your staff may have may be directed to R. A. Cordani, Deputy General Manager of FDD, at 725-4297. Questions specific to the Beta Gamma Incinerator may be directed to James W. Smith, Low Level Waste Treatment Facilities Area Manager at 208-3492.

Sincerely,



A. L. Schwallie  
President

CWS:jm

## ATTACHMENT 2

Westinghouse  
Savannah River Company  
Aiken, SC 29808



PEC-SCE-97-0047

Mr. Leonard C. Sjostrom  
Assistant Manager  
Health, Safety and Technical Support  
U. S. Department of Energy  
Savannah River Operations Office  
P. O. Box A  
Aiken, South Carolina 29802

Dear Mr. Sjostrom:

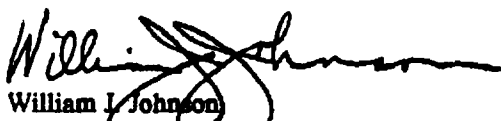
**Ref: Ltr WSR-970038, A. L. Schwallie to Mario Fiori, 10/2/97, "Savannah River Site (SRS) Actions in Response to Lessons Learned from the May 14, 1997 Explosion at the Hanford Plutonium Reclamation Facility"**

The attached information is provided per your CC:Mail request of 11/21/97, as an addendum to the report of October 2, 1997 (Reference 1) and describes the WSRC programs which provide reasonable assurance that hazards associated with chemical reactions that may occur in waste storage tanks are assessed and appropriate controls applied.

Line self-assessments, independent WSRC assessments, and programmatic self-assessments of these site programs are in place and working to assure that any program deficiencies are identified and corrected in a timely manner. We believe our overall program is effective in identifying and providing controls to protect against these hazards. Should DOE require assessment and reporting of individual waste tank hazards, we would address specific information needs on a mutually agreed cost and schedule.

Please feel free to contact me on 2-7222 if you have any questions.

Sincerely,

  
William I. Johnson  
Site Chief Engineer

WJJ:ja  
Attachments

CC: S. A. Johnson, 703-A  
J. J. Buggy, 703-A  
J. M. Allison, DOE, 703-47A  
F. R. McCoy, DOE, 703-A  
F. Beranek, 992-3W  
M. J. Hitchler, 992-3W

**Attachment****WSRC Waste Storage Tank Hazards Assessment and Controls**

WSRC has implemented the Integrated Safety Management Process which systematically identifies hazards, assesses the risk associated with those hazards and establishes appropriate controls for those hazards.

The primary guidance for performance of hazards identification and evaluation is the "Facility Safety Manual," 11Q. The 11Q Manual states:

"This Manual describes safety document requirements for facilities in FHCs [Facility Hazard Categorizations]. As shown in Figure 2, three of these categories are Nuclear Facilities (HC-1, HC-2, HC-3), while the other categories are Non-nuclear Facilities (Radiological, High Hazard Chemical, Low Hazard Chemical), and Other Industrial Facilities. The requirements of this Manual apply immediately to all Nuclear Facilities as listed in the S/RID. For Non-nuclear Facilities and Other Industrial Facilities, this Manual applies when a facility commits to prepare safety documents in the S/RID. . . .

This Manual addresses safety analysis and safety documentation requirements and provides an effective system for implementing those requirements. Safety analysis is divided into hazard identification, hazard analysis, and accident analysis. From these analyses, safety documents are prepared that become part of the safety basis. Once approved, control of changes is established for the safety basis. From Figure 3 there are five phases: hazard identification, hazard analysis, accident analysis, safety documents and safety basis, and safety basis control. The requirements for these phases are contained in this Manual. This system results in the preparation, review, approval, and maintenance of the set of safety documents included in a facility's safety basis."

Hazards analyses for SRS facilities are developed per WSRC-IM-97-9, "Hazards Analysis Methodology Manual," which requires identification of chemical hazards and provides guidelines for chemical mixing studies to support the overall hazard analysis.

Once specific chemical hazards are identified by this process they are analyzed per the "Toxic Chemical Hazards Classification and Risk Acceptance Guidelines for Use in DOE Facilities" (WSRC-MS-92-206).

Hazards analysis is also required for new projects developed per the E11 Manual which directs personnel managing projects to the E7 Manual, "Conduct of Engineering and Technical Support," Procedure 2.13, "Task Requirements and Criteria." Procedure 2.13 requires hazard analysis be performed. Additionally, hazard analysis is required by E7 Procedure 2.05, "Plant Modification Traveler."

Additionally, WSRC has also developed the Management of Change (MOC) process for those activities where the primary safety basis is provided in the form of a Health and Safety Plan (HASP). The MOC process is used to ensure the safety envelope is maintained throughout the life of a project/activity. This process is recommended in DOE-EM-STD-5502-94, "Hazard Baseline Documentation," and is outlined in DOE-STD-1120-98, "Integration of Safety and Health into Facility Disposition Activities." This process has been adopted for Environmental Restoration Division and Facility Decommissioning Division. Currently training for ER and FDD on MOC is under development for early CY98 implementation.

WSRC implementation of these programs addresses hazards associated with chemical and radioactive waste storage tank and ancillary equipment. However, if a more in-depth or comprehensive review is desired to catalog waste storage at SRS further discussions regarding scope, schedule and budget will be required.